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# **ANNUAL REPORT ON RECYCLING AND WASTE REDUCTION ACTIVITIES OF EXECUTIVE BRANCH DEPARTMENTS**

**FOR CALENDAR YEAR ENDING DECEMBER 31, 1990**



**State of Missouri  
Office of Administration  
In Consultation with the Environmental Improvement  
and Energy Resources Authority**



STATE OF MISSOURI  
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JOHN ASHCROFT  
GOVERNOR

JAMES R. MOODY  
COMMISSIONER

January 2, 1991

To the Members of the General Assembly  
State of Missouri

This report presents the status of Recycling and Waste Reduction activities of Executive Branch Department as required by Section 34.031 RSMo.

We will be glad to provide additional information upon request.

Sincerely,

A handwritten signature in black ink, appearing to read "Thomas F. Blaine, Jr."

Thomas F. Blaine, Jr., CPPO  
Director, Division of Purchasing  
& Materials Management

A handwritten signature in black ink, appearing to read "James R. Moody".

James R. Moody  
Commissioner of Administration

A handwritten signature in black ink, appearing to read "Stephen Mahfood".

Stephen Mahfood  
Staff Director  
Environmental Improvement  
& Energy Resources Authority

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# INTRODUCTION

This report provides an overview of State agency recycling activities required by Missouri statute 34.031.8 (resulting from HB 438, 440, 96 & 97) and identifies additional achievements and on-going initiatives which are not specifically required by this statute. State agency recycling activities address the provisions of HB 438, 440, 96 & 97 as well as the following actions: development and implementation of the Missouri Policy on Resource Recovery by the Department of Natural Resources and the Environmental Improvement and Energy Resources Authority, informal interagency recycling coordination (Office of Administration, Department of Natural Resources, Environmental Improvement and Energy Resources Authority and Department of Economic Development), activities of the Missouri Interdepartmental Committee on Waste Reduction and Resource Recovery, and coordination of the latter with the Missouri House of Representatives Staff to assist with the development of State Capitol Building recycling programs and with the Department of Higher Education to develop college and university recycling and waste reduction programs.

The Missouri Policy on Resource Recovery was announced by Governor Ashcroft in May of 1989 in order to integrate waste reduction and resource recovery into the daily activities of all Missourians. It directs State government to assume a leadership role in waste reduction and resource recovery by setting an example for local governments, businesses, and citizens.

Waste reduction is any practice which avoids or eliminates the creation of solid waste. Resource recovery is the recovery of materials from solid waste to produce new products or energy. Recycling is a type of resource recovery which is known to many Missourians as the collection of discarded materials. However, collection is only one of five steps of the total recycling system necessary to ensure that recycling actually occurs.

The total recycling system includes:

- Informed purchase of products made of recovered materials and products which can be recycled.
- Collection of recovered materials via office recycling programs, curbside collection programs, recycling collection centers, and used material exchanges.
- Processing of recovered materials to clean and prepare them according to industry requirements.
- Manufacture of new products from recycled materials.
- Sale of products by advertising the recovered material content to aid recycling-conscious consumers.

The State of Missouri is committed to supporting all steps of the total recycling system so that we can build a strong recycling future in Missouri. Supporting only collection activities can create oversupplies of materials and the halting of consumer recycling collection programs.

Important benefits of a strong recycling system are:

- New jobs for Missourians as our economic development efforts expand the number of local industries which manufacture new products from recovered materials.
- An increase in Missouri industries, which use recovered materials, will increase demand for collection of those materials.
- An increase in recycling will reduce our dependence upon incineration and sanitary landfills.

# **INTERDEPARTMENTAL ACHIEVEMENTS IN SUPPORT OF HB 438**

Regular meetings between Office of Administration, Department of Natural Resources and the Environmental Improvement and Energy Resources Authority have been held to coordinate the following: planning of State agency waste reduction and recycling activities required by HB 438; sharing of information regarding waste reduction and procurement, materials collection and expansion of recycling markets in Missouri; creating a public information booth highlighting state waste reduction and recycling programs; organizing and implementing the Missouri Interdepartmental Committee on Waste Reduction and Resource Recovery; and cosponsoring of the Conference on Partnerships for Economic Growth and the Environment (PEGE) with legislators and public interest groups.

The Missouri Interdepartmental Committee on Waste Reduction and Resource Recovery is composed of representatives from each Missouri State agency and is chaired by the Director, Division of Purchasing and Materials Management, Office of Administration. This group developed the "Policy for Recycling and Waste Reduction Pursuant to HB 438, 440, 96 & 97" and coordinates its implementation within all State offices.

## **PROCUREMENT OF PRODUCTS MADE FROM RECOVERED MATERIALS**

Products utilizing recovered materials that could substitute for products currently purchased:

### Landscaping/Gardening Products:

Compost - With the passage of SB 530 and the eventual ban on yard waste in land fills, the availability of this product should increase. We then would be able to substitute compost for peat and other products.

Landscape Timber - Currently the cost of recycled plastic landscape timbers is four times that of traditional timbers. This is due partly to transportation costs related to where the products are currently manufactured as well as cost of materials and current technology in manufacturing these items. However, new technology and construction in January, 1991 of a plant in the St. Louis metropolitan area should help to bring down the cost differential.

### Paper Products:

Currently the State is purchasing a large amount of paper products that contain recovered materials. As more of the products become available, the State will be able to increase the purchase of these items. Included in these future procurements are file folders, calculator tape, post-it note pads, EDP labels and continuous form paper.

Plastic Products:

Plastic Bags/Garbage Can Liner - The State currently has on contract garbage can liners that have recovered content.

Park Benches - Currently the price is not competitive with other types of materials.

Desk Top and Office Accessories - More of these products are starting to come on the market and Rubbermaid Corporation has shown significant interest in providing these types of goods. As these products become more readily available, State agencies should be procuring more and more of these products.

Plastic Lumber - Currently the cost of recycled plastic lumber is four times that of traditional lumber. This is due partly to transportation costs related to where the products are currently manufactured as well as cost of materials and current technology in manufacturing these items. However, new technology and construction in January, 1991 of a plant in the St. Louis metropolitan area should help to bring down the cost differential.

Picnic Tables - Picnic tables constructed from recycled plastic content continue to be significantly more in cost than those made from conventional materials. However, as more information becomes available as to the longevity of these products, favorable cost comparisons may be obtained in comparing the total life cycle costs of plastic versus tables made with conventional materials.

Re-refined Oil Products:

Automotive Oils - State law mandates that State agencies use a minimum of 15% of re-refined motor oils. The Division of Purchasing and Materials Management has purchased case lots of these products and distributed cases to State agencies wishing to try this re-refined oil. The O.A. Garage has purchased a total of 176 cases re-refined motor oil, representing 45% of their purchases in 1990, and is now utilizing it in State vehicles that are serviced at that facility.

Printed Materials:

Most custom printed booklets and materials that State agencies need can be made using paper with recovered content. Preference is given on all bids to the use of recycled paper. In addition, certain agencies require that recycled paper be used.

Carpet:

This is an area where the State may be purchasing products made with recovered materials in large amounts, however, it is not knowledgeable as to the recycled content. This is generally due to the carpet industry not wishing to disclose the amount of recycled content in their product due to the general image that recycled may not be as good quality. Once the carpet industry overcomes this reluctance, the State will be able to actively report and pursue its procurement of carpet made from recovered materials.

**Products currently purchased which cannot be substituted:**

Have not identified any product which cannot be substituted for virgin due to performance concerns. The primary barriers to purchase of products containing recovered content is availability and price.

**Recycled products purchased during 1990:**

<u>Item</u>	<u>Dept.</u>	<u>Recovered Material Content</u>	<u>Value of Contract</u>
<b>Special Printing Projects</b>			
Conservationist Magazine	Conservation	50%	
Conservation Outdoor Map	Conservation	50%	
Missouri Resources Review	DNR	50%	
Official Highway Map	Highway Dept	50%	
Laws of Missouri	Sec of State	50%	
Driver's Guide	Revenue	50%	
Watercraft Manual	Public Safety	50%	
<b>Total of All Printing Projects:</b>			<b>\$961,066</b>
<b>Recycled Bond</b>	All agencies	50%	<b>58,834</b>
25% rag paper & envelopes	All agencies	50%	30,000
Envelopes	MO Correction Indust.	50%	<b>595,000</b>
Envelopes	Revenue	50%	<b>37,272</b>
Toilet Tissue/Towels/Napkins	All agencies	50%	<b>369,514</b>
Various Printing Requests	O/A	50%	<b>9,451</b>
Recycling Promotional Materials (plastic)	O/A	100%	<b>915</b>
Ruled Pads	All agencies	100%	N/A
Trash can liners	All agencies	25%	<b>48,653</b>
Plastic lumber & posts	DNR	100%	<b>162</b>
Corrugated Containers	Revenue	100%	<b>1,394</b>
Packaging peanuts	Revenue	100%	<b>110</b>
Re-refined motor oil	O/A*	40%	<b>2,414</b>
Misc. Printed Papers	State Printing	50%	<b>35,000</b>
Recycling Containers	O/A	40%**	<b>4,500</b>
<b>TOTAL</b>			<b>\$2,124,315</b>

\* 45% of the motor oil purchased by the State garage during 1990 was rerefined. HB 438 requires that a minimum of 15% of State agency purchases of motor oil to be re-refined (recycled).

\*\* Post Consumer

# **DEPARTMENTAL ACHIEVEMENTS AND ONGOING ACTIVITIES**

## **OFFICE OF ADMINISTRATION**

### **CURRENT ACTIVITIES**

In FY 90, the State Agency for Surplus Property (SASP) redistributed to State, local government and eligible donee's, approximately \$15,852,000 in original acquisition costs of goods that were in excess of the federal government's needs. The actual transfer fees for the redistributed materials was \$996,578.

In the same period the SASP redistributed approximately \$520,000 worth of State property to other State agencies.

The Division of Purchasing and Materials Management has received a grant from the Division of Energy for an automotive lubricant resource recovery of energy conservation project.

The Division of Purchasing and Materials Management is in daily contact with the recycling contractor to coordinate recycling collection. Significant contact is maintained with State agencies on collection through telephone conversations and a recycling newsletter. Information is disseminated concerning State agency recycling activities pursuant to HB 438. Weekly on-site visits are made to the State agencies to ensure proper participation of the recycling collection effort by the State agency and the recycler. Monthly on-site visits are made to the recycling contractor to monitor collection activities.

### **CURRENT PROCUREMENT ACTIVITIES OF THE DIVISION OF PURCHASING AND MATERIALS MANAGEMENT**

Bids are being evaluated for laser cartridges that will be refilled by vendors.

The Division is identifying other items made from recovered materials and testing these items for potential future contracts for state agencies.

The Division has added refillable ball pens as an alternative to disposable pens to its office supply contract to encourage waste reduction activities.

The Division is serving on the ASTM Recycled Paper Sub Committee to assist in development of national standards for recycled paper.

The Division has rewritten its specifications and bid documents for plastic utensils and other plastic items taking into consideration the ban of products made using CFC's and the preference for products made from recycled materials.

## **STATE PRINTING ACTIVITIES**

State Printing has added recycled paper to available paper stock for printing by State agencies.

State Printing is making available business cards printed on recycled stock for the same cost as the virgin paper stock. The print shop will be phasing out the virgin paper stock for business cards. When the current supply is depleted only business cards printed on recycled stock will be available.

State printing purchased approximately \$85,000 of recycled paper for use on print jobs for state agencies. This represents about 5% of their total paper volume.

## **FUTURE PROCUREMENT ACTIVITIES**

The Division is discussing with several midwest states, the potential of setting up a paper consortium between those states for the purchase of fine paper and other products made from recovered materials. This joining together of states to increase their purchasing power should result in a reduction in costs for such products.

# **DEPARTMENT OF NATURAL RESOURCES**

## **RECYCLING COLLECTION ACTIVITIES**

Dissemination of information to both the public and private sectors concerning State agency recycling activities pursuant to HB 438.

Expansion of existing office paper collection to include colored and bulk quantities of computer paper.

Missouri State parks' administrative offices have implemented office paper, cardboard and newspaper collection programs.

Seven original park pilot aluminum collection facilities have expanded to include 24 additional sites for a total of 31. The program will be expanded to include all Missouri State parks for the 1991 season.

Missouri State parks have implemented battery and motor oil recovery programs for park vehicles.

## **MARKET DEVELOPMENT THROUGH PROCUREMENT**

During 1990, the department purchased recycled products in substantial quantities. The type and quantities are as follows:

Pads of ruled paper	2,304
Reams of copy paper	3,310
Sheets of letterhead paper	190,000
Envelopes	200,000
Printed manila envelopes	6,000
Plastic posts	30
Cases of waste can liners	300

The Department of Natural Resources' Missouri Resource Review magazine is currently being printed on recycled paper.

Missouri State parks have initiated a program to purchase recycled oil as required under provisions of HB 438.

## **OTHER RESOURCE RECOVERY ACTIVITIES**

Missouri State parks have established pilot programs for composting leaf and yard waste to be utilized as soil amendment and mulch within the park itself.

Missouri State parks are currently studying applicability of using waste oil collected from their vehicles as an energy supplement for heating various regional maintenance buildings.

Waste Management Program conducted an environmental assessment of biodegradable plastics and made recommendations on State procurement of such products as required by HB 438.

Waste Management Program determined which plastic holding devices may be used in accordance with HB 438.

Waste Management Program published the following public information documents for statewide distribution:

- Waste Reduction Tips for Businesses
- Waste Reduction Tips for Households
- The Total Recycling System
- Major Appliance Collection Centers of Missouri
- Requirements for Plastic Holding Devices Technical Bulletin
- Prohibition for Major Appliance Disposal in Landfills Technical Bulletin
- Prohibition of Waste Oil Disposal in Landfills Technical Bulletin

## **WASTE REDUCTION ACTIVITIES**

Purchase refillable rather than disposable pens as a waste reduction activity.

Purchasing chairs and floor pads from Office of Administration's Surplus Property as a waste reduction activity.

Technical Assistance and Methodology provided to all State agencies in waste audit procedures.

Waste Audit conducted in Jefferson Building and approximately 64 State parks.

## **ENVIRONMENTAL IMPROVEMENT AND ENERGY RESOURCES AUTHORITY**

### **ONGOING ACTIVITIES**

Continued operation of Missouri Waste Exchange Service to promote re-use and recycling of industrial wastes.

Continued financial support of Household Hazardous Waste Project and Missouri Energy Resource Project which both have strong educational components promoting conservation, re-use and recycling.

Successful applicant to host major national convention on recycling (National Recycling Coalition) in early 1990's. This convention, to be held in Kansas City, will both highlight recycling efforts and achievements in the State and bring to the State the latest in recycling technologies and equipment.

EIERA funds the Midwest Assistance Project's efforts to provide assistance to many small Missouri communities in dealing with deteriorating waste treatment and solid waste systems.

Continued membership in Great Lakes States Recycling Officials organization, facilitating the exchange of information, trends, and inter-state cooperation on recycling issues.

Represented on the board of the Mid-West Recycling Association, allowing important input from the State of Missouri in regional policy formulation.

The Authority Director is Vice President of the Missouri Waste Control Coalition (MWCC) and the Authority staff chairs several committees. The MWCC promotes better communication among recycling public interest groups, industry and government.

EIERA has been recipient of Exxon Oil Overcharge Grants to provide industrial waste reduction and recycling information to Missouri industry and to promote and demonstrate municipal yard waste composting for the State.

Authority granted funds to DNR Waste Management Program for establishment of a computerized solid waste information system which will, in part, allow for monitoring waste flows and recycling trends.

Continued membership in the National Recycling Coalition (NRC) and attendance at the NRC's National Recycling Congress.

EIERA received a letter of commitment from the National Recycling Coalition to be the Missouri coordinating agency for the 1995 National Recycling Congress, which will be held in Kansas City. The National Recycling Congress is the largest convention in the United States devoted to recycling and waste reduction issues.

EIERA designed and developed tote bags targeted at high school and college students, and other influential groups. The tote bags display a message that encourages recycling, reuse and waste reduction.

In cooperation with the Department of Natural Resources' Division of Energy, EIERA cosponsored Energy Awareness Month in four Missouri communities to promote energy conservation and energy efficiency.

EIERA provided financial assistance to Crowder College in Neosho for operational and personnel expenses in the development of a solar-powered vehicle.

EIERA is one of the State agencies that will assist in the development of a funding mechanism for new recycling markets. A portion of the monies collected from landfill taxes will be earmarked to establish new recycling markets and encourage use of recycled materials.

The Authority Director has participated in several meetings of the Global Warming and Ozone Depletion Committee which is seeking a solution to global warming problems that could affect the State and region.

The EIERA is assisting the DNR and DNR's Division of Energy in conducting a nine-month study that will access current and projected energy practices and provide alternatives to energy conservation and efficiency and will recommend policies and a plan for implementation.

# MISSOURI HIGHWAY AND TRANSPORTATION DEPARTMENT

## EXISTING RECYCLING PRACTICES

Existing recycling practices of the Department of Highway & Transportation include (1990 quantity):

- Metal sign reclamation (45,000)
- Salvage sign button copy (70% cost savings)
- Sawdust - cover crack pouring asphalt
- Cinders - snow removal
- Wet bottom boiler slag - by-product
  - snow removal
  - aggregate in asphalt
- Flyash, in concrete (17,000 tons)
- Roofing shingle granules, by-product - snow removal
- Asphalt millings from construction rotomilling projects
  - remix with hot mix asphalts
  - fill edge ruts
  - mix with asphalt as cold mix
- Brush chippers - 31 in use - chips used for mulch
- Lead mine tailings - by-product
  - snow removal
  - in asphalt mix
- Guardrail straightening
  - straighten accident damaged guardrail panels
  - MHTD owned machine is moved around state
- Slick paper for mulch binder - must contain kaolin clay. Mulch binder on highway construction.
- Maintaining a list of products containing recycled materials.
- Continually reviewing specifications to permit recycle components.
- Acquire all printing products through state purchasing to ensure recycled material competition.
- Prohibit the use of polystyrene plastic in all products purchased by MHTD.
- Prohibit the use of polystyrene foam in packaging products delivered to MHTD.
- Used oil in maintenance building heating stoves (nine in use).
- Used motor oil generated by MHTD is being picked up for recycling for other use.
- Cooperative project with OA.
- Provide recycling information to Adopt-A-Highway groups (4,600 adoptions by 46,000 people).

## **PILOT PROJECTS AND NEW PROGRAMS BEING IMPLEMENTED**

Recycling waste paper in Jefferson City area (four ton per week being sorted and picked up).

Recycling paper in district offices outside of Jefferson City. Implementation of paper pick up for recycling in Jefferson City was completed in December 1990. After all problems are worked out, the pick up of recyclable waste will be explored in the outstate district offices.

Rotomills - nine small units purchased for routine maintenance crews. Millings will be recycled into pavement.

Plywood sign reclaiming. Began in November 1990. 1,900 plywood signs reclaimed in 1990.

Highway maps will be printed on recycled paper. Two and one-half million copies.

Plastic product purchases - word "virgin" being removed from all plastic product specifications.

Purchasing six additional brush chippers for maintenance crews.

Reclaimed rubber modified asphalt. One mile test project on I-70, Boone County. Ground up reclaimed rubber in asphalt mix. Project was very successful. Additional projects in research next summer.

Highway litter sorting. A truckload of bags filled with roadside litter will be delivered to recycler to evaluate value of litter. One truckload in Kansas City and one in Columbia. Results not final.

Use of re-refined motor oil in department vehicles.

## **STATE AGENCY RECYCLING COLLECTION ACTIVITIES**

The following State departments and agencies have implemented recycling collection in coordination with the Office of Administration within their facilities:

Department of Agriculture

Department of Conservation

Department of Corrections

    Including the Prison System (MSP, Algoa, Renz)

Department of Economic Development

    Including Professional Registration & Job Development

Department of Elementary & Secondary Education

Department of Higher Education's Central Office

    Including the State Library

Department of Highway & Transportation

    Including District 5

Department of Labor & Industrial Relations

    Including Employment Security

Department of Mental Health

Department of Natural Resources

    Including DEQ - Central Office & Lab Services

Department of Public Safety  
Including Highway Patrol  
Department of Revenue  
Department of Social Services  
Governor's Mansion  
Governor's Office  
Lieutenant Governor's Office  
Missouri House of Representatives  
Missouri Senate  
Missouri State Lottery  
Office of Administration  
Public Service Commission  
Secretary of State  
State Auditor's Office  
State Emergency Management Association  
State Treasurer's Office

The Springfield area does have a contract for recycling collection which the above departments, who have facilities located in this area, are utilizing successfully.

Since HB 438 was enacted, the Office of Administration has attempted on two occasions to bid recycling collection for the St. Louis and Kansas City areas. On both bid requests we received no bids from all vendors solicited. During January of 1991, the Division of Purchasing will be meeting with St. Louis and Kansas City recycling vendors to attempt negotiating a recycling contract for these areas.

## DETAILS OF COLLECTION

During the period of January 1, 1990 through August 20, 1990, Missouri Correctional Enterprises was picking up recyclable waste paper from various State agencies in Jefferson City. During that time, 333,060 pounds of materials were diverted from the landfill and forwarded to processing centers. On August 21, 1990, Civic Recycling of Columbia, Missouri began direct collection of recyclable paper waste from State agencies in Mid-Missouri. For the period of August 21, 1990 through November 30, 1990 a total of 199,896 pounds of materials were diverted from the landfill and separated for recycling. This included 33,584 pounds of computer printout, 41,447 pounds of white ledger, 59,683 pounds of color ledger, 36,654 pounds of mixed ledger and 28,527 pounds of ground wood paper. In addition, the Department of Revenue, through their confidential document destruction contract, has caused 134,680 pounds of wastepaper to be separated for recycling. There is a national consensus that for every ton of paper that is recycled there are savings over the production of paper product from virgin fiber. These savings are as follows:

- Saves 17 trees
- Reduces landfill used by 3 cubic yards
- Reduces air pollution by 60 pounds
- Saves 682 gallons of oil
- Requires 7,000 gallons less of water in the paper making process
- Saves 4,102 KWH of energy

Based upon these figures, recycling by State government in the Mid-Missouri area during the period of January 1, 1990 through November 30, 1990 caused the following savings over the production of paper products from virgin fibers.

Saved 5,675 trees  
Reduced landfill usage by 1,001 cubic yards  
Reduced air pollution by 20,028 pounds  
Saved 227,665 gallons of water  
Reduced the usage of water by 2,336,740 gallons  
Saved 1,369,330 KWH of energy

The rate of collection of recyclable State government waste continues to increase. We have observed a very high rate of compliance by State agencies with the voluntary recycling efforts. The recycling contractor has also observed a very low level of contaminants in the waste paper being received from these agencies.

## **WASTE AUDIT**

A waste audit is a systematic accounting of the materials input and waste output that identifies procedures with potential for procurement, waste reduction and recycling. A waste audit identifies quantities of raw materials, composition of waste and percentage of recyclable materials. In general terms a waste audit provides information on the quantity, quality and types of waste being disposed of in any given location. This information is vitally important for planning waste reduction activities, recycling collection programs, environmentally conscious procurement and market development activities.

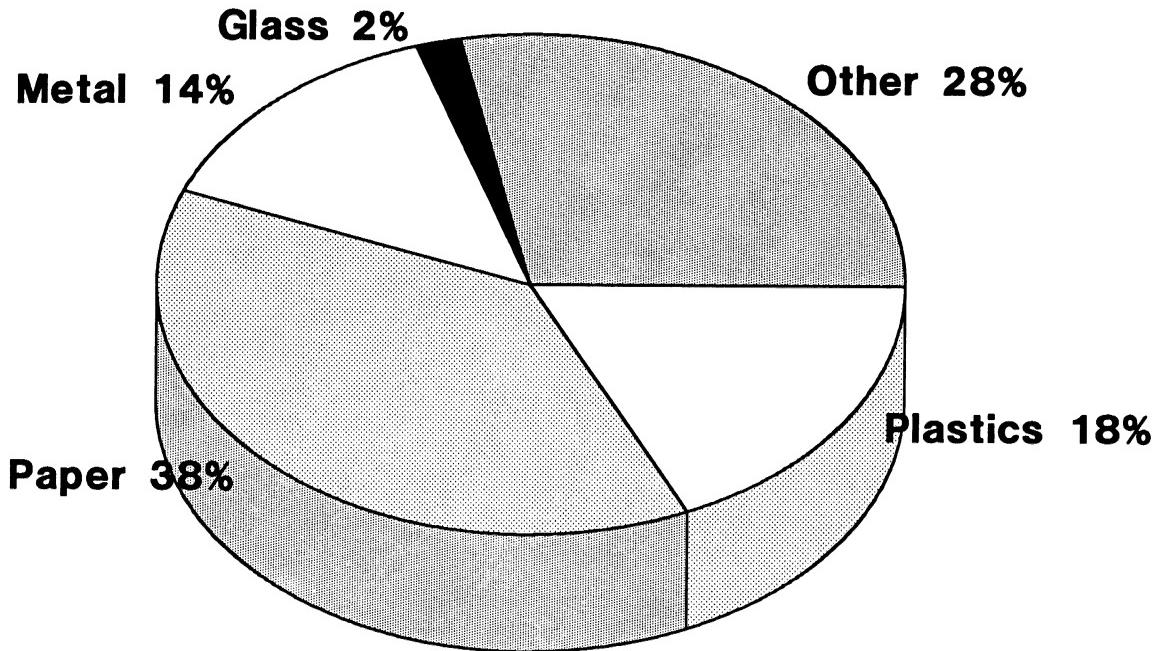
During the Spring of 1990, the following agencies conducted waste audits:

Department of Natural Resources  
Office of Administration  
Coordinating Board of Higher Education  
Malcolm Bliss Mental Health Center  
Department of Mental Health - St. Louis Regional Center  
Department of Labor and Industrial Relations  
Highway and Transportation Department  
Southwest Missouri State University  
Department of Higher Education  
Department of Corrections

Waste audits conducted by State agencies indicate that the predominant waste being discarded by State agencies are paper products. The Truman Building audit yielded 86% of the waste by volume as paper products while the volume for the Jefferson Building was 81%. Glass accounted for 1% in the Truman Building and 3% in the Jefferson Building while metal was less than 4% in the Truman Building and 2% in the Jefferson Building. Plastic accounted for 8% by volume in the Truman and 11% in the Jefferson. As these buildings are in an office setting, the types and amounts of waste differ from the national averages for municipal solid waste. Figures for MSW are 38% for paper, 14% metal, 18% plastic, 2% glass and 28% other materials including yard waste.

# Volume of Material in MSW\*

\*Municipal Solid Waste



# Volume of Material in SGW\*

\*State Government Waste

